

FIRE INSURANCE FOR KANSAS SCHOOL PROPERTY

by

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B. S., Kansas State Teachers College
of Emporia, 1927

A THESIS

submitted in partial fulfillment of the

requirements for the degree of

MASTER OF SCIENCE

KANSAS STATE COLLEGE
OF AGRICULTURE AND APPLIED SCIENCE

1935

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TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	2
PURPOSE	2
GENERAL METHOD	3
THE THEORY OF INSURANCE	4
INSURANCE PROCEDURE	9
INSURANCE TERMS	14
DETERMINATION OF FIRE INSURANCE RATES	20
SELF INSURANCE	26
FIRE LOSSES IN KANSAS	36
STATUS OF FIRE INSURANCE OF KANSAS SCHOOL PROPERTY	51
SUMMARY	63
RECOMMENDATIONS	67
ACKNOWLEDGMENTS	69
LITERATURE CITED	70

INTRODUCTION

The problem of providing public education for the children of Kansas has caused a large amount of money to be invested in buildings and equipment. The adequate care and protection of this property is a very important matter to all people.

In a period of economic difficulty schools have been forced to operate on reduced budgets. All items have been considered with ideas of possible reduction in mind. Because of the cost of insurance and the infrequency of fires among school buildings it was thought practicable to make a study of the facts about fire insurance protection for school property in Kansas. To insure school property economically involves many elements which justify a study of the management of this phase of school finance.

PURPOSE

The fire insurance for school property has been a commercial enterprise handled by the local school authorities.

Insurance is not usually well understood by the average individual, therefore, the purpose of this study is to present a picture of the pertinent facts concerning fire protection of our school buildings and contents. It is hoped

the study of this problem will be of value to educators, taxpayers, and those concerned generally with the problem of school finance.

It is hoped to point out proper insurance procedure and methods that will best serve the public needs, and to suggest the means of achieving adequate protection with the greatest possible economy. It is believed this study should arouse the interest of school officials in the state regarding a subject of great importance to our school systems.

An attempt is made in the study to discover the answer to two important questions, namely:

1. Are schools of Kansas paying rates that are justifiable, neither too high nor too low, and are they in line with rates paid by other classes of property?

2. What methods are possible for bringing about an improvement of inadequate methods for insuring school property and for obtaining as favorable rates as possible?

GENERAL METHOD

Material for this study was obtained from questionnaires sent to all the 88 first and second class cities in Kansas, from records and reports of the Kansas state offices in Topeka, and various contacts with men working with some phase of fire insurance. The supplemental material came through articles of recent study and from writers considered

authorities in the field of fire insurance. The questionnaire used to gather data for this study is shown on the following page.

THE THEORY OF INSURANCE

The fundamental factor of insurance for school properties is the same as in business, that is, complete and adequate protection at the lowest possible cost. In order to approach the subject of school fire insurance in an understandable manner it is necessary to understand a number of fire insurance theories and practices.

Insurance is set up to eliminate the uncertainty for the individual. It does not eliminate risk but distributes the losses among many.

Even though the chance of total loss is small, an individual cannot afford to run the risk of losing his capital investment when it is possible to pay a small sum to prevent this loss. It is possible to predict within fairly accurate limits, from experiences with fires and from the law of averages, how many houses will be destroyed by fire in a year. Thus, by combining a number of risks, the uncertainty present in the case of one building is changed to relative certainty in a large number of cases.

HADDAM, KANSAS
February 26, 1935

Dear Superintendent:

I know how distasteful questionnaires are. I know that when they are to serve the personal interest of some single individual, one's objection is doubly justified. I believe the outcome of this questionnaire, however, should be of as much concern to you as it could possibly be to me. Therefore, will you give it your kind consideration?

Recently in an informal study it has been discovered that during the last ten years the Boards of Education of 44 first and second class cities paid \$998,000 in premiums to fire insurance companies and that they received a total of only \$367,000 as indemnity. This raises the question, "Are we not paying rates altogether too high?"

In an effort to obtain an answer to this question you are requested to supply as much of the information called for on the blank as you have available.

If you care for a copy of the results, please indicate your desire.

Sincerely yours,

Howard D. Smethers.

Premiums paid	Indemnity received	Rate per \$100 for fire and windstorm (for 1933-34 only)
1924-25		
1925-26		
1926-27		
1927-28		
1928-29		
1929-30		
1930-31		
1931-32		
1932-33		
1933-34		

1. Are your policies of the Co-insurance type? _____ What percentage? _____
2. Is all your property covered on one form or is there a separate form for each building? _____
3. What is the most recent date when your property was appraised? _____
4. What is the term of your policies? _____
5. Do all premiums for the entire amount of insurance come due during the same year? _____ Or do you have approximately an equal amount fall due each year? _____ For instance, if you have \$100,000 and your term is 5 years, do you pay the premium on \$100,000 once each 5 years or do you pay one-fifth during each of the five years? _____

CITY

The underwriter, by combining a sufficiently large number of buildings, is able to assume the risk of each individual and thereby he substitutes for the uncertainty of loss by the individual the certainty of large numbers. For this the insured pays a fixed sum and is indemnified for any loss that he may suffer. Anything that decreases uncertainty has economic value to society as a whole. To diminish the degree of uncertainty reduces the cost of risk to everyone. As this is true the accumulation to meet the uncertain loss is brought nearer to the probable loss as estimated by the law of averages, which makes insurance a benefit to society.

The application of the law of averages requires the combination of a large number of risks of similar hazards scattered over a wide territory. Consequently a company usually limits the amount of insurance it will carry in a certain section.

Therefore, insurance may be defined as that social device for making accumulations to meet uncertain losses of capital, which is carried out through sharing of the risks of one person with many individuals. A factor which is common to all forms of insurance is the substitution of large and uncertain losses for a small but certain payment (8).

There are two important types of companies offering

insurance against loss by fire, mutual and stock companies. The mutual fire insurance companies differ from stock companies in that in them the insured enters into the business of insurance, shares in the profits of the enterprise, and helps to make good the losses, if there are any. The results of insurance in either of these types of companies are practically the same since the insured in both cases is relieved of the risk of loss by fire upon payment of a sum of money. The stock companies have for their purpose the making of a profit, while the purpose of the mutual companies is protection at the lowest cost.

A stock company is a corporation which determines the probability of loss by fire in a large number of buildings for a certain period of time, and from this a certain rate is fixed called a premium, in return for the payment of which it agrees to indemnify the owner in case of loss by fire. The insured upon payment of the premium is relieved of all risk.

A mutual company is made up of a number of individuals or groups of individuals who have combined for the purpose of mutual protection in case of loss by fire on the part of any one of them. The entire group contracts to reimburse any member of the group for any loss by fire on property that he has insured. Each person insured enters into the insurance business and in return agrees to pay his pro-rata

share of losses that others of the group may suffer. Theoretically, the amount that a person may be called upon to pay is not a fixed sum, but varies in proportion to the fire losses which occur within the group. However, in actual practice, the premium paid in mutual companies is practically a fixed sum as it is in the case of stock companies. The insured shares in the profits as dividends or he may be assessed to make good any excessive loss that occurs.

In general much criticism of the mutual type of companies has been because in addition to the premium payment the insured is liable for additional assessments in case of excessive loss which may be several times the annual premium. However, A. V. Gruhn, General Manager of the American Mutual Alliance, is authority for the statement that no mutual company with a surplus of \$200,000 or more has ever levied an assessment (2). Furthermore, according to Best's Insurance Guide for 1930 (5) there are 39 mutual companies writing non-assessable contracts that exempt members from contingent liability. There is no sound reason why school insurance should not be carried with selected mutual companies since insurance may be placed with mutual companies at a lower cost than that charged by stock companies. One Kansas mutual insurance company with an A+ rating offers to the schools a non-assessment policy at a 10 per cent reduc-

tion in premiums.

INSURANCE PROCEDURE

The first consideration in the purchase of insurance should be the reliability of the company from which it is proposed to purchase the insurance. There were 256 stock companies and 147 mutual companies that failed during the period of 1920 to 1931 (5, p. 14).

The National Association of Public School Business Officials (5, p. 14) recommends the standard employed by the Prudential Life Insurance Company and the Mutual Benefit Life Insurance Company for a check on fire insurance companies. These requirements are listed as follows:

1. The loss paying record and the character of the management of the company must be rated A-1 in Best's Insurance Guide.
2. The company writes all business at Official Board rates.
3. The company must be licensed in and its business must be spread over at least 10 states.
4. The company must have been in continuous operation for a period of at least 15 years.
5. The ratio of losses paid to premiums received during the preceding 5 years must not have exceeded 40 per cent.
6. The ratio of expenses paid to premiums received

during the preceding 5 years must not have exceeded 30 per cent.

7. The company must set up the same reserve for unearned premiums and losses as required by the full legal reserve statute, which represents in effect 100 per cent of the unearned premium.

8. The assets must be at least \$3,000,000 and its surplus not less than \$800,000.

All insurance companies should be selected upon their merits to meet the standards set up in the foregoing list.

The usual procedure, however, does not consider the company alone, but the insurance carried may be divided among the local agents in a variety of ways among which are according to:

1. The companies represented.
2. The length of time the agent has been in business.
3. The volume of business written.
4. Whether insurance is a side line or the agent's business.
5. The quality and kind of service rendered to the board of education.
6. Personal friendships.

After the company and the agent have been selected they should offer assistance in whatever ways are possible, beginning with using the building rating sheet from the

Kansas Rating Bureau for making a careful analysis to determine how the rates should have been calculated. These will show the basic rate and what additional charges if any have been made. It may then be economical to remove causes of the charges and thus lower the rates. The removal of the causes of the charges not only lowers the premium rate but is an added safety for the property due to the removal of a source of fire.

When all the physical alterations have been made and a notice sent to the rating bureau they will make a new survey of the school and from this the new rate will be set.

When the rate has finally been determined the next step is to determine the value of the property to be insured. This may be done in at least three ways:

1. The value of property may be estimated by real estate men or a contractor. This represents merely a matter of judgement.

2. The value may be determined by a recognized appraisal firm. This is perhaps the most accurate procedure.

3. The value may be determined by an established fire insurance company.

It is found that in practice school property values are determined in many other ways when it comes to insurance. In many cases records show no values, some show estimated value, replacement value, cost, and appraisal value. In a

study of appraisals the following methods were found to be used in 65 cities; 27 determined the value for insurance by replacement cost less depreciation, 12 determined their values by appraisal at irregular intervals, 7 had their buildings appraised each year, 4 used the original cost as the value, 8 used original cost with annual depreciation, and 7 used book value annually depreciated (5, p. 157).

With the true value of property determined and the rate set the type of policy best adapted to the situation must be selected. Various forms may be used and are described in a previous section of this study. Policies are written on flat or coinsurance rates. It is now generally understood that in most cases coinsurance is preferred because of the decided saving in premium costs. However, in some states only fire resistive school buildings may be insured under coinsurance rates.

The insurance may be written for a one-year, two-year, three-year, four-year, or five-year term. However, the long term (five-year) is usually preferred because the premium is proportionately less, being only four times that for the one-year term. It would seem a good practice to have one-fifth of the appropriation for insurance come due each year in place of the entire amount appearing in the budget only once in five years. After the first five years this system may become regular by using these two methods:

1. By writing the entire amount for a five-year period and then cancelling one-fifth of the insurance at the end of the first year and rewriting for a period of five years. This procedure, if followed for four years, will result in having one-fifth of the insurance carried mature each year after the five-year period.

2. The second method is to write one-fifth on a one-year term, one-fifth on a two-year term, one-fifth on a three-year term, one-fifth on a four-year term, and one-fifth on a five-year term. At the end of each year the expired policies should be rewritten for a five-year term. After five years this system will become regular.

In the first method when a policy is cancelled and returned to the same company for a longer period no loss results from the short term.

Inspection of school buildings to locate fire hazards should be made at least twice a year and be a part of all regular insurance practice. Some of the leading insurance companies offer this inspection service free of charge to their patrons or clients.

Every school district should maintain some system of records for all insurance in force, showing at least the type of insurance, amount of coverage, company insuring, name of agent, policy number, date issued, term of policy and premium on the policy, and expiration date.

INSURANCE TERMS

So that those who read this study may understand the terms in the same manner that the writer has used them, the following definitions are given (6; 8; 5, p. 15-16):

Policy. The contract between the insurer and the insured.

Specific policy. The most common policy which is used when each school building is insured separately. It covers only one building and its contents, and shows the exact location and amount of insurance carried. If more than one policy is issued on a building a clause is attached stating that the company is liable only for its pro-rata share of the entire amount carried. This does not hold true if the policy is written with a coinsurance clause.

Valued policy. One which shows the value agreed upon at the time it is issued rather than after a loss has occurred.

Blanket policy. One used by cities having a great number of buildings, and covers two or more risks for a stated amount of insurance, but specifies no amount for individual buildings.

Term of insurance. The length of time for which the policy is written. The usual terms are for one, three, or five years.

Rates. The amount of money paid by the insured for \$100 worth of insurance for a period of one year. Variations are made for different lengths of terms that policies are in force. The standard rates for the different items are:

1 year	= full rate (annual rate)
2 years	= $1\frac{3}{4}$ full rate
3 years	= $2\frac{1}{2}$ full rate
4 years	= $3\frac{1}{4}$ full rate
5 years	= 4 full rate

Short rate. Charged when a policy is written for a term less than a year. A short rate is relatively higher than the ordinary rate. Usually when issued for one month the charge is 20 per cent of the annual rate and increases 10 per cent for the next five months and from the seventh month on it increases 5 per cent for each month.

Term rate. Rate applied to a period longer than one year, and is less than the annual rate.

Specific rate. Rate given a certain piece of property at a definite location and is usually arrived at after the property has been rated according to a schedule.

Flat rate. A rate that does not make any allowance for coinsurance. This rate is used when the property is not insured under the coinsurance plan.

Average rate. One used when one policy is issued for the insurance of several buildings.

Coininsurance. A clause inserted into the contract stating that the insured may have a lower rate by agreeing to insure his property for a certain percentage of its value. The lower rates are based on a percentage of the flat rate.

Eighty per cent of the value of the property is the percentage usually required for coininsurance. However, other percentages may be used but with different deductions from the flat rate. The credits for each percentage may vary and not always remain as given by Smith (6) in Table 1.

Table 1. Deductions from flat rate for various percentages of coininsurance in certain cities in Ohio and per cent that coininsurance rate is of flat rate.

	Per cent of coininsurance				
	50	60	70	80	90
Deduction from flat rate	40%	48½%	55%	60%	64%
Per cent that coininsurance rate is of flat rate	60	51½	45	40	36

Thus, a particular property has a value of \$10,000, and if insured on the 80 per cent plan for \$8,000, all losses up to \$8,000 will be paid by the company, but if insured for \$6,000 on the 80 per cent plan the company will pay only 75 per cent of the losses up to \$8,000 since

$$\frac{\text{amount insured } \$6,000}{\$8,000} = 75 \text{ per cent}$$

In Table 2 it is pointed out how the coinsurance clause operates when the owners live up to their part of the agreement, and how they may be penalized when they fail to do so (2).

Coininsurance was established according to Smith (6) so that owners of property might be persuaded to insure for more nearly the full value of the property or else assume part of the loss in case of damage by fire. A very large percentage of the fire losses that occur are only fractional losses. Therefore, property owners could insure for only a small percentage of the value and assume the risk of a large loss. As a result the fire insurance companies were compelled to pay a large number of small losses on property which was insured for only a fractional part of the entire value. This naturally caused the losses to amount to a greater percentage of the insured value than if the building had been insured for its full value.

To prevent the tendency to insure for a small amount the coinsurance clause was introduced. Under this clause the insurer is given the lower rate if he insures for a certain percentage of the value. If he does not insure up to the value required, he becomes a coinsurer with the company for the percentage that the amount carried is lacking of the required percentage.

The following formula may be used to calculate 80 per

Table 2. Operation of an 80 per cent coinsurance clause.

Actual cash value of property insured	:Insurance required by: 80 per cent coinsurance clause	:Insurance actually purchased:	:Loss by fire	:Amount paid by insurance company	:Loss sustained by owner	Remarks
\$100,000	\$80,000	\$100,000	\$100,000 80,000 40,000	\$100,000 80,000 40,000	\$ 0 0 0	All losses paid in full
100,000	80,000	80,000	100,000 80,000 40,000	80,000 80,000 40,000	20,000 0 0	All losses paid in full up to face value of policy
100,000	80,000	50,000	100,000 80,000 40,000	50,000 50,000 25,000	50,000 30,000 15,000	Losses paid in proportion 50000/80000 but not exceeding face value of policy

cent coinsurance, remembering that the company will never pay more than the face of the policy:

$$\text{Amount of loss paid} = \frac{\text{Amount insured} \times \text{amount of loss}}{80 \text{ per cent of insurable value}}$$

Appraisal. By appraisal is meant the fixing of the true present value of property. The reproduction value minus depreciation gives the sound value of property. The insurable value of a building is the sound value minus the cost of excavations and foundations.

Loss ratio. A term used by insurance companies to indicate the percentage of earned premium that is paid out in losses during a given year. If the loss ratio of a company is 50 per cent for a year the company has paid out 50 per cent of the premium in that year in payment for losses occurring during the same year.

Insurable interest. A term used to show that the insured is personally interested in the value of the property. He must be running a risk of losing a tangible interest of recognizable value.

Reinsurance. A practice of insurance companies to reduce their liability by insuring a portion of the risk in other companies.

Exclusions. The non-insurable portions of a building, such as excavations, foundations, footing, and architect's fees.

Loading. That portion of premium income allocated by the insurance companies for overhead expense, such as, sales expense, taxes, service departments.

Make-up sheet. The written report of a building, showing size, construction, structural features, specific hazards, and protective devices.

Penalties. Debits added to the basic rate for points of deficiency.

Risk. The insurance term for property insured.

Insured. One who has purchased insurance protection.

Replacement value. The cost of a new building according to the same plans and specifications of an old building.

Depreciation. Reduction of value due to physical deterioration, or lack of adaptability to service.

Insurable value. Sound net value minus the exclusion items.

DETERMINATION OF FIRE INSURANCE RATES

There are three ways (8) in which fire insurance rates may be determined: judgment, scheduled, and experienced. Two systems of rating are extensively used in the United States. The Universal Mercantile or Eastern Schedule is used in the North and East. The Analytic or Dean System is used in the central and western states. A scheduled rating is an itemized listing of all the variable conditions and

physical factors that make up fire risks together with a table of charges and credits corresponding to the presence or absence of different degrees of hazards on a given property.

When the Universal Mercantile System is used, the basic rate is secured by setting up a standard building in a standard town. A standard town is one with water works of specified character and efficiency, water main of stated size, efficient fire and police departments, hard surfaced streets of a minimum width, an effective building code, favorable exposures, and a previous five year record not exceeding a \$5 annual fire loss to each \$1,000 of insurance carried. The basic rate is 25 cents per \$100 for a standard building in a standard town and the basic rate of the city is increased for any special hazards. A charge of 32 cents is made for a risk in a town deficient in water supply, fire engines, fire alarm, telegraph, police, etc. For certain superior qualities a deduction is made for basic rates. After the city has been rated, more than one hundred features of construction in a single building help to determine the rate, such as, walls, area, floors, windows, roofs, chimneys, stairs, and heating and lighting systems. Occupancy charges are measured in terms of damageability, ignitibility, and combustibility.

A building is also charged or credited for exposure.

Charges are made for hazards; credits are given for hydrants located near a corner building, fire escapes, etc.

The second system, the Analytic or Dean, groups all risks into classes as to general character of construction. There are three classes:

Class A -- Fire resistive

Class B -- Brick or stone

Class C -- Wood or other material

All cities and towns are divided into 10 classes according to their general fire hazards. The lower class starts with a one story brick building of ordinary construction and 1,000 square feet in area in a town with the poorest conditions of fire protection.

Rates and Rate Making

A board of education should make a careful selection of its agents in order that it may be assured the service to which each local community is entitled. Each agent should feel that it is his personal responsibility to render the best of service to the insured.

The idea that rates are set by the state and nothing can be done about the matter is very illusive and misleading. After all the methods of scheduling rates are only a matter of judgment and no two may be judged the same.

In arriving at these rates a survey is made of the building and the physical conditions. The conditions used are those present at the time of the survey regardless of whether they are permanent or temporary conditions. When buildings are rated, everything is taken not as it should be but as it actually is found at that time. A great many fire hazards are due to poor management. Many small items tend to increase the rate such as broken plaster, absence of metal under stoves, gas and coal oil stoves poorly arranged, stovepipes, faulty flues, electrical wiring, steam pipes, combustible material laying around, boxes, rubbish, crowded condition of merchandise, cracked wall paper, gasoline, paint cans, etc.

Two types of surveys are used, one for fireproof construction and another for the ordinary construction. The following forms will indicate in detail how building surveys for fire insurance rates are made.

Rating bureaus are compelled by law to furnish the owner or a legally authorized representative with these rates and a copy of the survey made in the specific rating of said property (6).

SURVEY

Town_____State_____

Survey No._____

Date_____192_____

Map: Vol._____Page_____Lot_____Block_____

Inspected by_____

Addition_____

Owner_____No._____

Street, Avenue_____Side_____

MEMORANDA

Class of Town: _____

Nat'l Board _____ Old _____

Prot. at risk classes as: _____

Nat'l Board _____ Old _____

Tables _____

Occupancy: _____

Light, Ordinary. _____

Area details: _____

Basis: _____ (no bas.) = _____ + _____ % (_____ c) for Star = _____

Height: _____ stories, _____ ft. to eaves, with without bas., sub-bas. _____

Area: _____ for _____ floors _____ % _____ /10 for Div. Walls _____

Walls: If other than brick, charge _____

Right _____ Sup., Non-sup., Indp., Party _____

Left _____ Sup., Non-sup., Indp., Party _____

Front _____ Sup., Non-sup., Indp., Party _____

Rear _____ Sup., Non-sup., Indp., Party _____

Masonry piers carry part, all of load Right, Left, Front, Rear _____

Party wall charges Right _____ Left _____ Rear _____

Unpro. metal columns, beams, front, right, left, rear, 1st, 2d, 3d, 4th, 5th, 6th. Wall on such stories principally glass, metal, wood HCB, HT, concrete, stone, brick, apron _____ high _____

HCB, HT, hollow block wall, right, left, front, rear: story _____

D, Skel. IC, BV wall, or mansard, right, left, front, rear: story _____

Parapets: _____ Right _____ thick _____ high, Adj. bldg. higher lower _____ stories _____ feet _____

Left _____ thick _____ high, Adj. bldg. higher lower _____ stories _____ feet _____

Rear _____ thick _____ high, Adj. bldg. higher lower _____ stories _____ feet _____

Addition with D, Sk. IC, BV, HCB, HT, walls _____ stories _____

Foundation: Wood, masonry piers, not enclosed, under addition. Filled ground _____

Roof: Metal, composition, approved, not appr., gravel, Sk. IC, Skeleton steel, tile, slate, asbestos compo. wood shingle: Mansard surfaced with _____

Ceilings-Walls: Wood, cloth, paper, plaster board _____ B 1, 2, 3, 4, 5 _____

Skylights: No. _____ thin, heavy, wire glass, wood, metal frames, not screened. Give sizes in marg. _____

Light shafts, enclosed courts, not covered _____ Ventilators, Louvres: not screened _____

Floor Openings: Grade of floors _____

Opening	SB-B	B-1	I-2	2-3	3-4	4-5	5-6	
Stairways								Describe enclosure (if any) below.
Elevators								
Chutes								
Dumb Waiters								
Well Holes								
Light Shafts								
Courts								
Belt Holes, pr.								
To roof space								
Charges or Credits								

(Circle credits) _____

Partitions between occ., Bas., 1st. Metal wood lath and plaster. Decks: Note under Occupancy _____

Chimneys: Brick, tile, HCB, concr. _____ in. thick. On brackets, posts, joists, fdn., ground. No. _____

Stovepipes: Thru floor, partn., roof, window, side, ceil. to attic, bot. of chy. No. _____ Clear _____ in.

Heat: Steam, hot water, hot air, outside, gas, stoves, kerosene, fuel oil, portable, none _____

Light: Electricity, gas, gasoline, acetylene, kerosene lamps, lanterns, none _____

Exterior Attachments: D, Sk., IC, BV, stairs, open, boxed, cornice, not cut off, not continuous, bay windows, porches, awnings, small sheds, monitor, roof houses, without floor, bridges, covered open, enclosed, platforms fdn. not encl., wooden roof display signs, not exposed, rear, large, small _____

Occupancy: Total Col. 1 and highest of Col. 2 charges brought forward _____

Fire Doors, Shutters, etc. _____

CREDITS—Structural: _____

Superior construction (describe fully in margin): _____ floors, _____ openings _____ %

Reduced for roof _____, columns, beams _____ stirrups _____ partitions _____

decks _____ = _____ FP Addn. _____ % _____

Open finish _____

Incombustible floor 1st, 2d (describe) _____

Total Percentage Charges Extended _____

Structural credits added and extended _____

CREDITS—Protective: _____

Standpipe, size _____ in. _____ ft. of _____ in. hose each floor and bas. _____

Fire escapes (outside), landings each floor _____

Automatic, Manual alarm system, not approved. Name _____ combination watch stations _____

Casks and pails _____ sand pails _____

Chemical ext. 2½ gal., tetrachlorid, not labeled _____ auto. sprinklers _____

Watchman, clock, name _____ central station combination boxes, separate manual boxes _____

No. of stations _____ Rounds _____

Heat from outside. No heat _____

Protective credits added and extended _____

BUILDING RATE, unexposed _____

Percentage Charges

\$ _____

24

ft
ft
ft

Rate including Raw Stock Replacement: 50% of Basis=-----added to above rate=---

FIRE PROOF SURVEY

Date _____

Surveyor _____

Town _____ State _____

No. _____

Owner _____

Risk No. _____

MAP, Vol. _____ Page _____ Lot _____ Block _____

Street _____

		Charges	Credits	Totals
	Height _____ Stories, with, without basement, sub-b'sm't, 2nd sub-b'sm't _____	_____ %	_____ %	\$ _____
	Basis \$ _____ — \$ _____ (no b'sm't) = \$ _____ + _____ % (for *) = \$ _____ net, — \$ _____ (_____ floors P. C.) = _____			
1	Area _____ Floors			
2	Walls (occupancy, light, ordinary), Construction, _____			
	Right, Indpt, party, curtain, self-supporting, bearing-thickness _____ Avg. _____ in. Def. _____ in.			
	Left, Indpt, party, curtain, self-supporting, bearing-thickness _____ Avg. _____ in. Def. _____ in.			
	Front, curtain, self-supporting, bearing-thickness _____ Avg. _____ in. Def. _____ in.			
	Rear, Indpt, party, curtain, self-supporting, bearing-thickness _____ Avg. _____ in. Def. _____ in.			
	Bearing Party, right, left, rear, minimum thickness _____ in. _____ Story			
	Frame, IC, Sk. IC, BV., right, left, front, rear _____ Stories			
	Iron and (or) Glass, right, left, front, rear _____ Stories			
	Stone, concrete not reinforced, tile, terra cotta, HCB., right, left, front, rear _____ Stories			
	Bay Windows, wooden frames, right, left, front, rear, continuous, not continuous _____ Stories			
3	Ceilings and Walls, sheathed with wood, strawboard, paper, canvas _____ Stories			
	Non-combustible finish with combustible supports _____ Stories			
4	Skylights, No. _____ Size and description _____ wired, not wired			
5	Interior well holes, light shafts and courts (open to the sky) _____ Area			
6	Roof, reinforced concrete, hollow tile, wood _____ combustible over fireproof floor, top story retinue _____			
	Parapets, Right, thickness _____ height _____ adjoining building is higher, lower _____ Stories _____ ft.			
	Left, thickness _____ height _____ adjoining building is higher, lower _____ Stories _____ ft.			
7	Floor, construction and thickness _____			
	Floor Surfacing (wood), nailing strips not imbedded in fireproof material, space beneath flooring not filled _____ Floorways			
	Floor Supports, roof supports, construction _____ Stories			
8	MEMORANDA OF FLOORWAYS AND THEIR RETINUES. (DESCRIBE FULLY ARRANGEMENT AND PROTECTION OF ALL VERTICAL OPENINGS)			
	Cockloft or Roof Space, open, closed _____			
	Chutes, Dumb Waiters, Ventilating Shafts _____			
	Hatchways _____			
	Stairways _____			
	Elevators _____			
	Carried forward _____	_____ %	_____ %	\$ _____

Miscellaneous Floorway Openings

Floorways	S-B	B-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15-16	16-17	17-18	18-19	19-20
Retinue (lowest)																					
No. Op's "below a"																					
Ch'g's and Credits																					

9 Partitions, non-combustible, with, without combustible studding, framing, resting on fireproof floor, on wood wearing floor, anchored, not anchored at top

Stories

Decks, galleries, platforms (construction)

Area (storage of goods)

Stairs (construction)

Heating, stoves, hot air, hot water, steam, location

Lighting, gas, kerosene, gasoline, acetylene, electricity

10 Exterior Attachments, awnings, stairways, open, boxed, bridges, enclosed, open, sides, roof, monitors, roof houses

11 Additions (not fireproof), brick, HCB., tile, Sk. IC., frame, IC., communicating (not cut off), height

stories, area = % of combined area, increased, decreased %

roof area = % of combined area, + 2

12 Fireproofing, beams, trusses, girders, columns, floor and roof slabs, re-inforcing members,

13 Occupancy Charge (see schedule pages 4, 5 and 6)

Charge and credit totals

Balance of percentages extended

CREDITS
(STRUCTURAL)

Interior Finish free from stone or marble veneering and decorations

Wood floor surfacing, combustible frames

Water-tight floorways, light occupancies, no combustible furniture and fixtures,

Parts of Building less than one-half floor separated

Total Credits for structural features (added and extended)

(PROTECTION)

Inside standpipes, size hose, size amount steamer connection only

Outside fire escapes, landings each floor, outside standpipes

Automatic fire alarm system, name

Casks and pails, chemical extinguishers, buckets, No kind

Watchman, approved clock, central station No. of stations

Heated from outside source no heat

Total credits for structural features (added and extended)

Building Estimate, Occupied (unexposed) carried forward

Building Estimate, Occupied (unexposed) brought forward

EXPOSURES

Map No. or Division	Ordinary, Large, Small	Exposing	Exposed	No. of Openings	Rate	Standard	Per Cent of Standard	Distance	Diagonal Glancing
	stories				\$	\$	%	ft.	\$
	"				\$	\$	%	ft.	\$
	"				\$	\$	%	ft.	\$
	"				\$	\$	%	ft.	\$
	"				\$	\$	%	ft.	\$
	"				\$	\$	%	ft.	\$

WALL DAMAGES

Map No. or Division	Basis Rate	Final Rate	Excess	Total Charge	Per Cent	Net Charge	Distance	Reduction For Space	Change For Size
	\$	\$	\$	\$	%	\$	ft.		\$
	\$	\$	\$	\$	%	\$	ft.		\$

Map No.
or Div.

COMMUNICATION CHARGES

_____, Building, No. _____, Grade _____ C, _____ to D1, _____ % of \$ _____ = \$ _____ +, for _____ additional openings, Total \$ _____
 _____, Building, No. _____, Grade _____ C, _____ to D1, _____ % of \$ _____ = \$ _____ +, for _____ additional openings, Total \$ _____
 _____, Contents, No. _____, Grade _____ C, _____ to D, _____ % of \$ _____ = \$ _____ +, for _____ add. opgs. = \$ _____ Carr'd below
 _____, Contents, No. _____, Grade _____ C, _____ to D, _____ % of \$ _____ = \$ _____ +, for _____ add. opgs. = \$ _____ Carr'd below
 _____, Contents, No. _____, Grade _____ C, _____ to D, _____ % of \$ _____ = \$ _____ +, for _____ add. opgs. = \$ _____ Carr'd below
 _____, Contents, No. _____, Grade _____ C, _____ to D, _____ % of \$ _____ = \$ _____ +, for _____ add. opgs. = \$ _____ Carr'd below

Building Estimate, Occupied and Exposed

AFTER CHARGES (MEMORANDA)

Heating Arrangements, (unsafe)

Lighting Arrangements, (unsafe)

Power Arrangements, (unsafe)

Management and Condition of Premises

Miscellaneous, lack of metal lockers, metal waste cans, drip cups, drip pans, and no-smoking signs, use of flexible rubber tube with gas, etc. (see also sixth page)

Condition of Building

Age of Building _____ Special Taxes _____

Total After Charges (added and extended)

Building Estimate without attachment of reduced rate contribution clause

Building Estimate with _____ % deduction for _____ % reduced rate contribution clause

SCHEDULE OF OCCUPANCY

Total Column 1.....%; Highest Charge in Column 2.....%; Total Charges.....%

SCHEDULE OF OCCUPANCY

Total Column 1.....%; Highest Charge in Column 2.....%; Total Charges.....%

SCHEDULE OF OCCUPANCY

Total Column 1_____%; Highest Charge in Column 2_____%; Total Charges_____%

Fire Doors and Shutters (if not standard, describe defects)

REMARKS:

The State of Kansas passed the first law dealing directly with the making of fire insurance rates (6). This gives to the state insurance commissioner the full authority to raise or lower any rates that he finds to be inadequate or excessive. All rates must be filed with the commissioner of insurance and all companies must charge the same rate, unless permission is granted otherwise as in case of the mutual companies.

SELF INSURANCE

Self insurance refers to the responsibility that ownership assumes in such losses as may occur to property through fire or other hazards involving loss.

Self insurance may be classified into three categories: First, Insurance reserve fund plan, in which a fund is set up to be used for paying future fire losses; second, the No-Insurance plan, in which no insurance is carried either in reserve or in private companies, but all losses are paid out of current funds; and third, the Partial Insurance plan, in which the property owner carries his own insurance on fire proof buildings and insures all non-fireproof buildings with stock companies.

The simplest form of self insurance is the prevention of loss. Prevention involves elimination of the common hazards, such as bringing the electric wiring of properties

to the standard set by the National Electrical Code, governing electric installations; eliminating sources of spontaneous combustion; correcting defective flues; insulating flues; installing fire door, approved by the underwriters in rooms where the possibility of fire originating is greatest, as in the furnace, boiler and fuel rooms, the industrial arts or manual training room and the portions of buildings which are non-fire resistive. The installation of automatic sprinklers, fire extinguishers, special water service and fire fighting equipment should be considered.

Risks should be widely distributed and of fireproof construction, particularly the larger ones. The service of prevention against loss should be very adequate at every source of loss.

If the unit of ownership is large enough to provide a wide distribution of the hazards involved so that the law of averages may properly operate, the question of self insurance becomes an economic issue. Self insurance on this basis, over a period of years, will prove economical for any large division of government, such as a large city school district or a state. This fact (5, p. 144) is due to the large portion of premiums which goes to pay underwriting expenses of the commercial companies. For 264 companies, for the years 1926 to 1930, the underwriting expenses have been approximately 46.6 per cent of the premiums; while that

of self insurance organizations proves to be in the neighborhood of about 4 per cent.

The growth of the insurance business, the problem of insurance costs and returns, indifference and neglect to offer the best of service to meet the greatest possible losses without great handicap or difficulty have been factors leading to the development of self insurance.

Self Insurance in Cities

Smith (6) states that two conditions must be met in order that school fire insurance may be carried by the cities themselves; first, there must be a sufficient number of school buildings so that the law of averages will apply; and second, the buildings must be well scattered. He concludes that any large city can, over a period of years, save money by carrying its own insurance because of the high percentage of premiums that is required by insurance companies for expenses. His conclusions are based on the fact that this plan has proved satisfactory in the 22 large cities listed in his study.

The following report by Linn (2) is of interest in this relation:

"The Committee on Insurance Research of the National Association of Public School Business Officials reported in 1932 that out of 401 city school districts of 10,000 or

more population in the United States and Canada which it had investigated, 49 carried all or a major portion of their own insurance risks. The report of this committee contains the following interesting information.

"For the forty-nine cities under the self insurance plan, the total school building valuations are reported to be \$1,274,729,897. The combined losses for the ten-year period total \$1,415,352. The ratio of losses for the ten years to present valuations is eleven one-hundredths (0.11) of 1 per cent, or practically one one-hundredth (0.01) of 1 per cent of valuations per year. This is only one-fourth of the corresponding ratio which pertained in the cities which purchased insurance. The fire loss records of the self-insured city school districts are shown to have been four times as good as for those protected by insurance companies. The cost of all protection under this plan has been a small item and clearly indicates that school districts can and do furnish themselves complete and effective insurance service."

The specific data on a few cities which have been successful with their self insurance systems are significant.

"The school property losses in New York City over a period of 5 years amounted to only \$64,936 or 0.91 per cent on a round value of \$143,020,145. Insurance on the same amount of property would have cost 11 per cent or twelve

times as much as the total losses.

"School fire losses have aggregated only about \$6,000 annually in Chicago during the past 20 years." (2).

Between 1913 and 1929, Philadelphia experienced school fire losses amounting to \$405,844.44. If insurance had been carried during this time, approximately \$1,250,000 would have been spent for premiums. An indefinite appropriation was made each year ranging from \$25,000 to \$525,000, which totaled with interest \$3,183,658. The interest on this has more than paid all fire losses. The sum of \$1,900,000 was withdrawn to build a fireproof building to replace old ones (4).

The Cincinnati plan of self insurance was adopted in 1912; approximately \$12,500 for several years then \$25,000 annually was placed into a reserve fund. In 1924 the local insurance fund reached \$350,000 and was invested in school bonds. Since that time no appropriations have been made, but the fund continues to increase from the interest on the fund. In 1931 the fund amounted to \$401,000 but paid out less than \$5,000 for losses in the 19 years. The interest will be allowed to accumulate until the fund reaches \$500,000, after which time interest payments will be transferred to the general fund for school expenditures (4).

Self Insurance in States

Since the majority of school districts are too small to warrant their assuming the risks that must be assumed when they carry their own insurance, and since rates which are charged by insurance companies appear to be excessive when school losses are considered, it has been suggested that school property should be protected against loss through state insurance. Under this plan of insurance the risks are widely distributed and constitute a sufficient number to permit the law of averages to function.

Seven states have adopted and have in operation some type of a self insurance plan. These are: Alabama, Florida, Michigan, North Dakota, South Carolina, Vermont, and Wisconsin. However, only North Dakota, Wisconsin, and South Carolina have established funds and provided insurance for public school property against loss by fire. These three states are all very successful in their plans for handling their own insurance.

The following excerpts (2) have been used to illustrate the successful experience with state insurance:

"The South Carolina State Insurance Plan. South Carolina adopted the state-insurance plan in 1900 and made insurance of all public school property in the state fund compulsory. A standard form policy is issued and rates are

charged that average approximately 20 per cent less than the rates charged by commercial underwriters. Windstorm insurance is provided with no additional charge. Under the law, when the fund reaches the sum of \$1,000,000 no further premiums are required to be paid on property that has been continuously insured with the fund for five years or longer. This limit was first reached in 1926.

"On September 30, 1931 a total of \$41,448,015 of insurance was carried with the state fund, of which \$26,658,472 represented insurance on public school property. The insurance fund amounted to \$1,004,869.43 at that time. It was figured by the Secretary of the sinking fund commission that the state-insurance plan saved the people of the state \$260,760.03 in 1928, and \$291,000 in 1929. An idea of the general success of this state-insurance plan may be obtained from the financial statement showing receipts and disbursements from the beginning of the fund in 1900 up to September 30, 1931.

Receipts	
Premium Income	\$2,085,747.94
Interest Income	516,311.57
Rents	2,250.00
	<u>\$2,604,309.51</u>
Disbursements	
Fire Losses	851,395.51
Windstorm Losses	61,291.38
Expense	81,624.82
Reinsurance	605,101.37
Net Profit as Represented by Assets on Hand September 31, 1931	<u>1,004,896.43</u>
	<u>\$2,604,309.51</u>

"The Wisconsin State Fire Insurance Fund. Wisconsin created a state fire insurance fund in 1903 for the purpose of insuring all state property to the amount of 90 per cent of its value at 60 per cent of the rate charged by stock companies. In 1911 and 1913 the statutes were amended to include county, city, village, town, school districts, and library property under the same terms, except that the amount of insurance desired was left optional with the board of control. On December 31, 1931 the state fund had insurance in force amounting to \$123,045,131.08, and was insuring all state-owned public buildings and the buildings owned by 27 counties, 41 cities, villages, and towns, 177 school districts, 3 sanitariums, and 7 libraries.

"Between 1903 and December 31, 1931 the people of Wisconsin saved \$4,072,506.67 through their state-insurance plan. Of this amount, \$1,276,368.20 represented savings from reduced premiums. During the period in question the premiums actually paid to the state fund aggregated \$3,246,310.66 as compared with a total of \$4,522,678.86 that would have been paid to stock companies had the fund not been in existence. The fund surplus, as of December 31, 1931, amounted to \$2,796,138.47.

"The total expense in connection with the administration of the fund between 1903 and 1931 amounted to \$92,872.62, or an operating ratio of approximately 3 per

cent. The loss ratio during that period averaged 28 per cent, despite the fact that premiums are only 60 per cent of those charged by private companies. A recapitulation of receipts and disbursements for the state fund between April 1, 1903 and December 31, 1931 presents the following financial picture:

Receipts	
Premiums Received	\$3,246,310.66
Interest	675,803.71
Return Premiums on Reinsurance ...	15,404.98
Profit on Sale of Assets	11,167.49
	<u>\$3,948,686.84</u>

Disbursements	
Losses Paid	910,326.64
Expense	92,875.62
Reinsurance	143,340.12
Loss on Sale of Assets	6,005.99
	<u>1,152,548.37</u>
Assets of Fund December 31, 1931	<u>2,796,138.47</u>
	<u>\$3,948,686.84</u>

"The North Dakota State Fire and Tornado Insurance

Fund. The North Dakota State Fire and Tornado Fund began to function July 1, 1919, and has had a successful experience in spite of a heavy loss when the State Capitol Building was destroyed by fire in 1930. The rates are practically the same as those charged by commercial underwriters doing business in the state. On July 31, 1932, the fund had total assets of \$1,660,276.76. The financial story of this state fund between 1919 and 1931 is told in the following exhibit.

Underwriting, Profit and Loss Exhibit
July 1, 1919--December 31, 1931

Total net premiums written	\$2,179,940.17	
Less unearned premiums 12/31/31..	270,689.87	
Total premiums earned		\$1,909,250.30
Losses paid	665,177.27	
Underwriting expenses	94,609.00	
Underwriting expenses and losses		759,786.27
Profit from underwriting		\$1,149,464.03
Interest received		247,662.09
Operating profit		\$1,397,126.12

Income Earned

Total premiums earned	\$1,909,250.30	
Interest earned	247,662.09	
		\$2,156,912.39

Ratios to Premiums Earned

Losses	34.0
Underwriting expenses	4.0
Underwriting profit	60.2

Ratios to Income Earned

Losses	30.8
Operating expenses	4.4
Operating profit	64.8"

The most remarkable thing about these state insurance plans is that South Carolina uses only 4 per cent, North Dakota 4.4, and Wisconsin 3 per cent of their premiums for operating expenses. Commercial companies require approximately 50 per cent for their operating expenses. While it is true that commercial companies limit their risks on individual policies by reinsuring with other companies, the state, a municipal insurance agency, also can carry reinsurance.

The law of averages certainly could not find a more

ideal situation than in Kansas which has some 9,460 school properties scattered over a territory of 80,000 square miles.

FIRE LOSSES IN KANSAS

The annual reports of the State Fire Marshall's Office (1, 7), known now as the Fire Division of the Department of Inspections and Registrations, State of Kansas, present some very interesting facts pertinent to this study. A report form is shown such as is filed with the above office for each fire which occurs in the state regardless of the insurance carried. A number of tables have been prepared to show fire losses on the educational institutions in Kansas. In Table 3 are shown all the losses annually from 1913 to 1934 inclusive for Kansas schools and for losses on all types of property. The table reveals an average of 25 fires for each of the 22 years for the schools compared with 3,282 for all classes of property. However, for the last ten years the average has been 19.5 fires per year on school property and 3,300 on all classes. The school losses have shown a tendency to decrease in number while that of all classes shows a slight increase.

The amount of fire losses on school buildings is shown in Table 4. Twenty-five per cent of all fire losses were for less than \$100 and 88 per cent of all fire losses were for less than \$10,000. Only three fires resulted in losses

amounting to more than \$100,000 and in only one case did the loss amount to more than \$200,000. In the past seven years the amount of losses indicates that losses have been only partial and one of the three large losses was on state property which was not insured.

Figure 1 shows the amount of the losses and the number of fires plotted. The curves tend to reach the peak during the period when heat is most needed, while when school has not been in session there has been practically no fire loss. This would indicate that a careful inspection of heating equipment and flues would greatly lessen the chance of fire.

The losses shown in Tables 5 to 11 are actual losses by fire although the property on which the losses were sustained was not always covered by insurance. For the years 1928 to 1934 inclusive the tables show the schools and counties involved in fire losses.

The summary for the seven years is shown in Table 12. The total of the 112 fires caused a loss of \$1,225,596 on building and contents. Fifty-nine per cent of this loss was covered by insurance leaving a net loss of \$502,737 to be carried by the school districts. Of the percentage covered by insurance, 66 per cent of the losses on buildings was insured, while only 30 per cent of the loss on contents was covered by insurance.

The total value of all property which was damaged by fire was \$5,277,917 and of this amount 61.3 per cent was covered by insurance. The average annual insured loss

KANSAS STATE FIRE MARSHAL DEPARTMENT

REPORTS TO THIS OFFICE ARE CONFIDENTIAL

MAKE SEPARATE REPORT FOR EACH BUILDING BURNED

amounted to \$103,265.

Report No.
Leave this blank.

Date of report.....day of.....193.....

Date of fire.....day of.....193.....

Hour of fire.....o'clock.....M.

Name of owner.....

Name of occupant.....

Street and number.....

City of.....

Kind of structure { wood }
 { stone }
 { brick }

How occupied { dwelling }
 { store }
 { manufactory }

Value of building, \$.....

Damage to building, \$.....

Insurance on building, \$.....

Value of contents, \$.....

Damage to contents, \$.....

Insurance on contents, \$.....

Cause of fire.....

.....

.....

.....

.....

.....

County of.....

NOTICE.

Read the following carefully before making report.

State the circumstances of the fire, indicating how and where it originated, and any other material facts.

If suspicious of incendiary origin, state the grounds for suspicion and mention date insurance was taken out.

INDICATING THE CAUSE OF THE FIRE.

“Carelessness” cannot be accepted as a cause of a fire, because all fires, save those from an adjoining fire, incendiarism and lightning result from carelessness.

“Adjoining Fire or Exposure” applies in all cases in which the burning of a near-by building is the cause.

“Lightning” being the cause, state whether or not building was rodged. If so, were the rods in good condition?

.....

.....

.....

“Personal Injuries.” Were any persons killed or injured in this fire? If so, give names, extent and cause of injuries.

.....

.....

.....

.....

REMARKS.

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Mayor or Fire Chief.

Kansas Fire Marshal Law.

(Revised Statutes of 1923.)

31-201. That the state fire marshal, either by himself or through other persons as in this act provided, may investigate the cause, origin and circumstances of any fire occurring within the state, and in such cases it shall be the duty of the chief of the fire department of every city, the mayor of any city where no fire department exists, and of the township clerk of every township outside the limits of any city to investigate the cause, origin and circumstances of every fire occurring in such city or township as the case may be by which property has been destroyed or damaged, and to specially make investigation as to whether such fire was of incendiary origin. Such investigation shall begin within two days, not including Sunday, after the occurrence of each fire. The state fire marshal shall have the right to supervise and direct such investigation whenever he deems it necessary. The officer making the investigation of fires occurring in cities or townships shall forthwith notify the state fire marshal and shall, within one week of the occurrence of the fire, furnish to the state fire marshal a written statement of all facts relating to the cause, origin and circumstances of the fire and such other information as may be called for in the blanks provided by the state fire marshal. Any officer named in this and the preceding section who neglects to comply with any requirements of this act shall be fined not less than twenty-five (25) dollars nor more than two hundred (200) dollars. [L. 1917, ch. 198, § 5; March 8.]

31-209. That there shall be paid to the chiefs of fire departments, mayors of incorporated cities where no fire department exists, who receive no compensation for their services as fire chief or mayor, and to the clerks of organized townships, without the limits of incorporated cities, who are by this act required to report fires to the state fire marshal, the sum of fifty cents (50c) for each fire so reported to the satisfaction of the state fire marshal, and in addition thereto mileage at the rate of five cents (5c) per mile for each mile necessarily traveled in going to and returning from the place of fire. Said allowance shall be paid by the fire marshal out of any funds appropriated, designated or set apart for the use of the said state fire marshal. [L. 1917, ch. 198, § 18; March 8.]

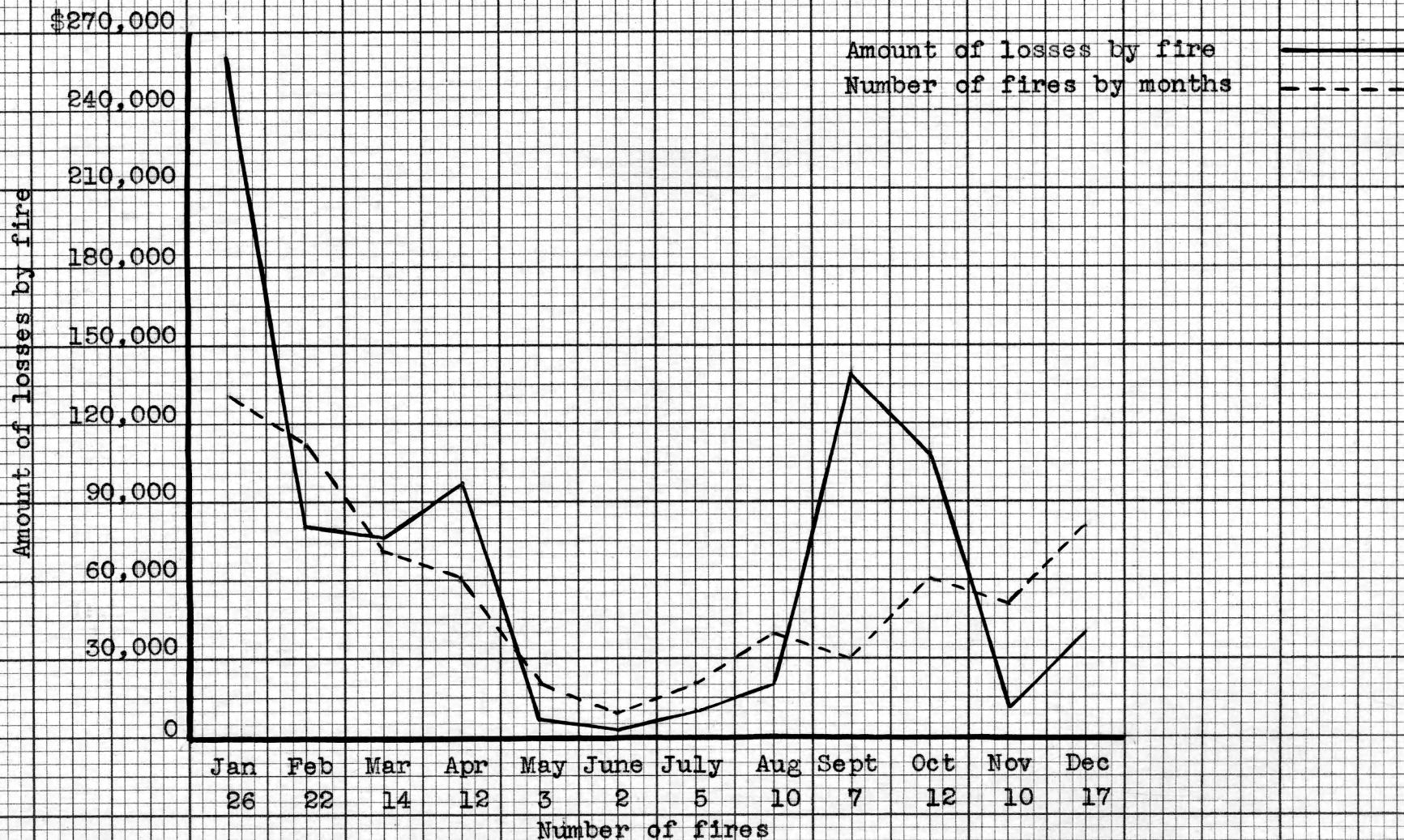


Fig. 1. Number and amount of fires by months for Kansas for the years 1926-1934, inclusive.

Table 3. Kansas school losses and combined property losses including schools.

Year	Schools and colleges		All property in Kansas	
	Number	Amount	Number	Amount
	of	of	of	of
	fires	loss	fires	loss
1913	15	\$ 35,074	3127	\$ 4,257,773
1914	35	100,816	2974	3,411,224
1915	33	181,645	2445	2,745,803
1916	35	131,594	3305	4,050,743
1917	35	70,103	3693	4,883,994
1918	40	214,082	--	--
1919	28	142,818	--	--
1920	15	85,600	--	5,616,117
1921	32	142,100	3220	5,301,203
1922	32	63,868	3910	5,729,847
1923	28	207,771	3397	5,262,697
1924	33	296,144	3750	5,884,553
1925	36	402,778	3788	6,177,044
1926	25	109,770	3337	4,801,773
1927	23	33,601	2801	4,017,335
1928	11	54,100	3128	4,254,481
1929	18	288,225	2974	3,788,772
1930	17	84,317	3445	4,034,586
1931	13	77,067	2915	3,417,759
1932	13	133,122	3482	3,761,155
1933	20	60,356	3380	3,238,521
1934	19	533,391	--	--
Totals	556	\$3,448,342	59071	\$84,635,380
Averages	25.27	\$ 156,743	3282	\$ 3,847,063

Table 4. Amount of fire losses on Kansas school buildings
(not including contents).

Amount of loss	Number of fires by years							Total
	1928	1929	1930	1931	1932	1933	1934	
\$ 0-\$4.9	0	0	3	3	1	1	2	10
5- 99	3	5	2	2	5	4	2	23
100- 499	1	2	3	2	4	3	3	18
500- 999	1	0	0	1	1	0	3	6
1,000- 9,999	5	8	7	4	2	11	5	42
10,000-49,999	1	1	2	0	0	1	2	7
50,000-99,999	0	1	0	1	0	0	1	3
105,632 only	0	1	0	0	0	0	0	1
120,000 only	0	0	0	0	1	0	0	1
260,000 only	0	0	0	0	0	0	1	1
Total number of fires	11	18	17	13	14	20	19	112

Amount of loss per year*	\$48,075	\$240,918	\$73,632	\$59,967	\$124,587	\$49,356	\$397,468	

Note: 25 per cent of all fire losses were for less than \$100.
88 per cent of all fire losses were for less than \$10,000.
The loss in only three fires amounted to more than \$100,000.
The loss in only one fire amounted to more than \$200,000.

*See Tables 5 to 11.

Table 5. Kansas school losses for 1928.

Name of school	County	Buildings				Contents			
		Amount of				Amount of			
		: Value	: Insurance :carried	: Loss :by fire	: Uninsured :loss	: Value	: Insurance :carried	: Loss :by fire	: Uninsured :loss
Blessed Sacrament	Wyandotte	\$ 20,000	\$ 15,000	\$ 5	--	\$ 600	\$ 5,000	--	--
Kansas City	Wyandotte	85,000	43,200	4,000	--	9,000	8,000	\$ 1,000	--
Roe Institute	Sedgwick	8,000	5,000	5	--	2,000	--	--	--
No. 28	Wyandotte	3,000	2,000	3,000	\$ 1,000	1,000	500	1,000	\$ 500
Bethel College	Harvey	8,000	3,000	150	--	250	--	15	15
Coffin	--	3,000	1,000	1,200	200	300	200	300	100
No. 12	Ottawa	14,000	10,000	15	--	3,000	1,000	10	--
No. 21	Rice	35,000	25,000	35,000	10,000	4,000	1,500	3,400	1,900
Lincoln Public	Sedgwick	125,000	120,000	3,000	--	--	--	--	--
Centropolis	Franklin	1,200	900	1,200	300	300	100	300	200
Music School	Sedgwick	30,000	15,000	500	--	10,000	5,000	--	--
Totals	:	\$332,200	\$240,100	\$48,075	\$11,500	\$30,450	\$21,300	\$6,025	\$2,715
Totals for buildings and contents	:	\$362,650	\$261,400	\$54,100	\$14,215	:	:	:	:

Table 6. Kansas school losses for 1929.

Name of school	County	Buildings				Contents			
		Amount of				Amount of			
		Value	Insurance carried	Loss by fire	Uninsured loss	Value	Insurance carried	Loss by fire	Uninsured loss
No. 62	Douglas	\$ 7,000	\$ 3,600	\$ 7,000	\$ 3,400	\$ 887	\$ 400	\$ 887	\$ 487
No. 36	Osborne	50,000	20,000	40,000	20,000	12,000	7,500	8,500	1,000
No. 61	Douglas	6,000	3,600	6,000	2,400	600	400	600	200
--	Jefferson	--	6,500	15	--	--	--	--	--
Eagle Township	Sedgwick	36,000	40,000	10	--	--	--	4,000	4,000
Smallwood	Stafford	1,500	850	1,500	650	150	300	--	--
Winfield	Cowley	2,000	2,500	150	--	300	300	--	--
Mill Creek	Bourbon	2,300	1,500	2,300	800	350	3,000	350	--
Oskaloosa	Jefferson	4,000	3,600	211	--	500	450	--	--
No. 33	Cowley	2,000	1,250	2,000	750	300	250	200	--
Kansas City	Wyandotte	75,000	40,000	15	--	3,000	2,400	10	--
Mound Valley High	Labette	60,000	23,000	60,000	37,000	15,000	1,500	5,000	3,500
Kansas City	Wyandotte	35,000	27,000	10	--	1,000	--	--	--
Wichita	Sedgwick	696,810	500,000	105,000	--	125,040	121,570	19,400	--
No. 31	Shawnee	2,500	1,300	2,500	1,200	200	--	200	200
No. 13	Dickinson	5,000	4,000	5,000	1,000	1,000	500	1,000	500
School of Blind	Wyandotte	75,000	--	75	75	25,000	--	--	--
St. Benedict Col.	Atchison	45,000	36,000	8,500	--	200	4,000	1,000	--
Totals		\$1,105,110	\$714,700	\$240,286	\$67,275	\$185,527	\$142,570	\$41,157	\$9,887
Totals for buildings and contents		\$1,290,637	\$857,270	\$281,443	\$77,162				

Table 7. Kansas school losses for 1930.

Name of school	County	Buildings				Contents			
		Amount of				Amount of			
		: Value	: Insurance carried	: Loss by fire	: Uninsured loss	: Value	: Insurance carried	: Loss by fire	: Uninsured loss
No. 88	: Rice	: \$ 9,000	: \$ 5,500	: \$ 9,000	: \$ 3,500	: \$ 1,300	: \$ 500	: \$ 800	: \$ 300
Rossville Grade	: --	: 12,000	: 9,000	: 300	: --	: 800	: 500	: 100	: --
No. 2 5	: Washington	: 2,500	: 1,400	: 2,500	: 1,100	: 600	: 400	: 600	: 200
Kansas City	: Wyandotte	: 100,000	: 50,000	: --	: --	: 12,000	: 10,000	: 5	: --
Iona	: Doniphan	: 5,000	: 3,500	: 5,000	: 1,500	: 1,000	: 750	: 180	: --
No. 10	: McPherson	: 4,000	: 1,500	: 4,000	: 2,500	: 1,200	: 30	: 1,200	: 1,170
Shawnee	: Cherokee	: 2,000	: 1,200	: 2,000	: 800	: 500	: --	: --	: --
No. 10	: Seward	: 6,000	: 5,500	: 5	: --	: 600	: --	: 300	: 300
No. 15	: Cloud	: 2,000	: 1,200	: 2,000	: 800	: 500	: 200	: 25	: --
Parsons Grade	: Labette	: 100,000	: 10,000	: 300	: --	: 10,000	: 5,000	: 150	: --
No. 44	: Butler	: 3,000	: 2,100	: 3,000	: 900	: 500	: 200	: 500	: 300
School of Deaf	: Johnson	: --	: --	: --	: --	: --	: --	: 100	: 100
Beloit High	: Mitchell	: 260,000	: 160,000	: 10,000	: --	: 10,000	: --	: 500	: 500
Trinity Lutheran	: Atchison	: 3,000	: 1,700	: 2	: --	: 800	: 400	: 0	: --
Plainville Par.	: Rooks	: 8,000	: 4,000	: 75	: --	: --	: --	: --	: --
No. 2	: Pottawatomie	: 500	: 500	: 450	: --	: 500	: 250	: 25	: --
No. 13	: Doniphan	: 35,000	: 8,000	: 35,000	: 27,000	: 6,000	: 4,000	: 6,000	: 2,000
Totals	:	: \$553,000	: \$265,100	: \$73,632	: \$38,100	: \$46,300	: \$22,230	: \$10,485	: \$4,870
Totals for buildings and contents		: \$599,300	: \$287,330	: \$84,117	: \$42,970	:	:	:	:

Table 8. Kansas school losses for 1931.

Name of school	County	Buildings				Contents			
		Amount of				Amount of			
		Value	Insurance carried	Loss by fire	Uninsured loss	Value	Insurance carried	Loss by fire	Uninsured loss
Gypsum High	Saline	\$ 36,000	\$ 25,000	\$ 7	--	\$ 3,500	\$ 2,500	\$ 50	--
Abilene Jr. High	Dickinson	3,500	--	--	--	--	--	50	\$ 50
No. 97	Shawnee	2,000	1,000	2,000	\$ 1,000	600	300	600	300
No. 36	Edwards	4,600	1,500	4,500	3,000	500	--	500	500
No. 37	Bourbon	1,200	750	1,200	450	140	100	140	40
No. 3	Jewell	15,000	11,500	100	--	--	--	--	--
Burr Oak	Jewell	10,000	--	50	50	--	--	--	--
Maccachague	Wyandotte	75,000	49,400	10	--	5,500	4,000	--	--
No. 131	Smith	1,500	700	1,500	800	300	--	300	300
Grover	Cowley	--	--	--	--	3,000	--	3,000	3,000
Highland	Doniphan	50,000	29,000	50,000	21,000	12,000	4,000	12,000	8,000
Kansas University	Lawrence	200,000	--	500	500	100,000	--	500	500
St. John Military	Saline	3,000	1,000	100		300	--	10	10
Totals		\$401,800	\$119,850	\$59,967	\$26,800	\$125,840	\$10,900	\$17,150	\$12,700
Totals for buildings and contents		\$527,700	\$130,750	\$77,117	\$39,500				

Table 9. Kansas school losses for 1932.

Name of school	County	Buildings				Contents			
		Amount of				Amount of			
		: Insurance	: Loss	: Uninsured		: Insurance	: Loss	: Uninsured	
		: Value	: carried	: by fire	: loss	: Value	: carried	: by fire	: loss
Pittsburg	:Crawford	:\$ 50,000:	\$ 20,000:	--	--	:\$ 1,000:	\$ 408	:\$ 10	--
No. 70	:Cherokee	: 500:	360:	\$ 500:	140	: 2,000:	--	: 100	:\$ 100
No. 78	:Linn	: 300:	--	: 160:	160	: 100:	--	: --	--
Leavenworth Sr. High	:Leavenworth	: 120,000:	60,000:	120,000:	\$60,000	: 12,000:	5,000	: 8,000	: 3,000
No. 3	:Jewell	: 2,800:	2,000:	97:	--	: 300:	--	: --	--
Ottawa University	:Franklin	: 100,000:	--	: 100:	100	: 5,000:	--	: 150	: 150
No. 24	:Ellsworth	: 20,000:	14,000:	50:	--	: 3,000:	2,000	: --	: --
Shallow Water	:Scott	: 1,500:	1,500:	1,700:	--	: 400:	200	: --	: --
No. 3	:Rooks	: --	--	: 5:	5	: --	--	: --	--
No. 76	:Republic	: 1,200:	600:	75:	--	: 300:	200	: --	: --
No. 132	:Phillips	: 24,000:	16,500:	50:	--	: --	--	: --	--
No. 90	:Phillips	: 400:	200:	400:	200	: 150:	100	: 100	--
No. 90	:Phillips	: 2,000:	1,300:	1,300:	--	: 700:	500	: 225	--
No. 6	:Wyandotte	: 25,000:	13,000:	150:	--	: 500:	500	: --	--
Totals	:	:\$347,700:	\$132,700:	\$124,587:	\$60,605	:\$25,450:	\$8,908	:\$8,585	:\$3,250
Totals for buildings	:	:	:	:	:	:	:	:	:
and contents	:	:\$373,150:	\$141,608:	\$133,172:	\$63,855	:	:	:	:

Table 10. Kansas school losses for 1933.

Name of school	County	Buildings				Contents			
		Amount of				Amount of			
		Value	Insurance carried	Loss by fire	Uninsured loss	Value	Insurance carried	Loss by fire	Uninsured loss
Caney High	Montgomery	\$125,000	\$100,000	\$1,600	\$--	\$--	\$--	\$--	\$--
Oakridge	Douglas	6,500	4,500	6,500	2,000	750	500	750	250
School of Blind	Johnson	85,000	--	75	75	7,000	--	--	--
Sacred Heart	Leavenworth	25,000	18,500	1,200	--	600	--	--	--
Oakridge	Douglas	5,000	4,500	5,000	500	500	500	500	--
No. 36	Wyandotte	6,000	4,000	6,000	2,000	1,500	1,000	1,500	500
Cheever	Dickinson	2,200	1,000	2,200	1,200	400	200	400	200
No. 91	Cherokee	3,000	1,700	3,000	1,300	700	300	700	400
Brownville	Thomas	14,000	10,000	14,000	4,000	5,000	2,500	4,750	2,250
Seven Day Advent	Wichita	3,400	3,000	1	--	1,000	--	--	--
Mueberry High	Crawford	--	500	5	--	--	--	--	--
Osage High	Osage	55,000	50,250	200	--	3,000	--	--	--
St. Marys College	Pottawatomie	150,000	116,000	3,000	--	50,000	32,000	1,500	--
No. 60	Nemaha	3,000	2,000	3,000	1,000	--	--	--	--
No. 34	Stafford	2,000	1,600	2,000	400	600	400	600	200
Garfield	Pawnee	2,000	1,200	200	--	600	600	--	--
Longfellow	Montgomery	--	--	100	--	--	--	--	--
Emporia Teachers	Lyon	80,000	65,000	40	--	4,000	--	1,900	1,900
No. 3	Jewell	1,200	600	35	--	--	--	--	--
No. 39	Smith	1,200	800	1,200	400	300	200	300	100
Totals		\$569,500	\$385,150	\$49,356	\$12,875	\$75,950	\$38,200	\$12,900	\$5,800
Totals for buildings and contents		\$645,450	\$423,350	\$62,256	\$18,675				

Table 11. Kansas school losses for 1934.

Name of school	County	Buildings				Contents			
		Amount of				Amount of			
		Value	Insurance carried	Loss by fire	Uninsured loss	Value	Insurance carried	Loss by fire	Uninsured loss
Viola	Elk	\$ 1,400	\$ 1,000	\$ 5	\$ --	\$ 400	\$ 400	\$ 0	\$ --
No. 54	Graham	1,000	1,000	1,000	--	200	200	198	--
No. 14	Ness	100,000	63,000	500	--	10,000	--	100	100
Appanoose High	Franklin	12,000	8,000	12,000	4,000	3,000	2,000	3,000	1,000
Roosevelt High	Lyon	35,000	--	1,700	1,700	5,000	50	900	850
Central Institute	Sedgwick	250,000	325,000	3	--	10,000	--	9,000	9,000
Wyandotte High	Wyandotte	335,900	302,310	260,000	--	25,000	9,900	9,900	--
Garrison	Wyandotte	5,000	--	4,500	4,500	100	5	--	--
Seven Day Advent	Sedgwick	4,000	2,000	10	--	2,000	--	1,000	1,000
Garnett	Anderson	1,500	500	150	--	--	--	--	--
Inman High	McPherson	50,000	50	40,000	39,950	8,000	5,000	100	--
No. 52	Pottawatomie	1,000	1,000	1,000	--	200	200	100	--
Kansas State Col.	Riley	70,000	--	70,000	70,000	110,000	--	110,000	\$110,000
Byers High	Pratt	75,000	60,000	600	--	10,000	8,000	200	--
No. 19	Osage	3,000	2,000	--	--	400	--	--	--
No. 14	Ness	100,000	63,000	500	--	10,000	--	100	100
No. 31	Lyon	5,000	2,200	5,000	2,800	1,200	800	1,200	400
Winfield	Cowley	272,000	218,800	200	--	26,400	26,400	25	--
Cherokee	Crawford	15,000	10,500	300	--	1,500	500	100	--
Totals		\$1,256,800	\$1,080,360	\$397,468	\$122,950	\$223,400	\$53,455	\$135,923	\$122,450
Totals for buildings and contents		\$1,480,200	\$1,133,815	\$533,391	\$245,400				

Table 12. Summary of Kansas school losses for years 1928--1934.

Year:	Number of buildings involved	Buildings				Contents			
		Amount of				Amount of			
		Value	Insurance carried	Loss by fire	Uninsured loss	Value	Insurance carried	Loss by fire	Uninsured loss
1928:	11	\$ 332,200:	\$ 240,100:	\$ 48,075:	\$ 11,500:	\$ 30,450:	\$ 21,300:	\$ 6,025:	\$ 2,715
1929:	18	: 1,105,000:	: 714,700:	: 240,286:	: 67,275:	: 185,527:	: 142,570:	: 41,157:	: 9,887
1930:	17	: 552,000:	: 265,100:	: 73,632:	: 38,100:	: 46,300:	: 22,230:	: 10,485:	: 4,870
1931:	13	: 401,800:	: 119,850:	: 59,967:	: 26,800:	: 125,840:	: 10,900:	: 17,150:	: 12,700
1932:	14	: 347,700:	: 132,700:	: 124,587:	: 60,605:	: 25,450:	: 8,908:	: 8,585:	: 3,250
1933:	20	: 569,500:	: 385,150:	: 49,356:	: 12,875:	: 75,950:	: 38,200:	: 12,900:	: 5,800
1934:	19	: 1,256,800:	: 1,080,360:	: 397,468:	: 122,950:	: 223,400:	: 53,455:	: 135,923:	: 122,450
Total:	112	: \$4,565,000:	: \$2,937,960:	: \$ 993,371:	: \$340,105:	: \$712,917:	: \$297,563:	: \$232,225:	: \$161,672

Totals for buildings and contents	:	:	:	:	:	:	:	:	:
	:	: \$5,277,917:	: \$3,235,523:	: \$1,225,596:	: \$501,777:	:	:	:	:

Note:		Value of buildings covered by insurance				64.36 per cent			
		Value of contents covered by insurance				41.59 per cent			
		Value of buildings and contents covered by insurance				61.30 per cent			
		Loss by fire of buildings covered by insurance				65.67 per cent			
		Loss by fire of contents covered by insurance				30.38 per cent			
		Loss by fire of buildings and contents covered by insurance ...				59.00 per cent			

The fire losses per capita in the United States and in foreign countries reveal a very important need for education in a fire prevention program that will relieve this country of its enormous fire losses. These are ten times as great as those of all Europe and four times as great as the losses of any other single country. About 60 to 85 per cent of all loss is preventable (8). The fire loss per capita for 1928 for the various countries was as follows (8):

United States	\$3.93
Great Britian90
France49
Germany28
Italy25
Switzerland15
Holland11

Fire losses fluctuate with the economic condition of all countries. In periods of depression there are more losses (8).

When the fire loss of the United States is so much greater than that of other countries it is evident that a real need for fire prevention exists. Fire prevention may be produced by these means:

1. By systematic training of fire prevention in private and public schools.
2. By the work of the State Fire Marshall.
3. By enforcing a revision of building.
4. By modern fire departments.

5. By the compulsory requirement of automatic sprinklers.

6. By fixing a personal liability for any damage.

7. By careful and thoughtful men, women, and children.

The causes of loss by school fires are mainly due to faulty construction. The accumulation of rubbish and inflammable material also increases the fire hazards. The proportion of annual fire losses attributable to incendiarism has been estimated to average from 12 to 35 per cent. Deliberate destruction of insured property is a well known fact (8).

School property is free from moral hazards which are constantly a factor among private owned properties.

STATUS OF FIRE INSURANCE OF KANSAS SCHOOL PROPERTY

The property in which the citizens of Kansas have an invested interest is shown in Table 13. The data in the table were obtained from the state department of public instruction. They show a picture of the types of schools and the distribution of the value of school property in the State of Kansas.

While this study is concerned in general with the proper and adequate insurance of all the school property of the state it pertains particularly to the experience of boards

Table 13. Value of school property in Kansas*.

Type of school	:Number of: :buildings:	:Estimated :value	:Average :value
One-teacher	: 7312	:\$ 3,671,500:	\$ 502
Two-teacher elementary	: 755	: 11,084,447:	14,681
Two-teacher or more (elementary and high school)	: 459	: 14,864,137:	32,208
Rural high	: 362	: 12,567,529:	34,717
Community high	: 40	: 2,428,183:	60,704
Cities of first class	: 200	: 27,754,296:	138,771
Cities of second class	: 322	: 23,367,695:	72,570
Totals	: 9460	:\$105,737,787:	

*Report for 1933, State Department of Public Instruction.

of education of first and second class cities during the period 1925-1935. The basic data were obtained from questionnaire replies from school authorities in 54 of the first and second class cities and from a report of the National Board of Fire Underwriters.

A questionnaire was sent to the superintendents of schools of the 88 first and second class cities in the state. Replies were received from 11 first class cities and 43 second class cities. Information was not submitted, however, by all the 54 cities for the full ten-year period. A copy of the questionnaire is shown on page 5.

The data from the questionnaire replies have been tabulated in Table 14. Fire insurance premiums amounting to \$875,176.48 were paid by these 54 cities and they re-

Table 14. Fire insurance data for school property of first and second class cities.

Cities	Period:	Premiums	Indemnity	Coin-	One	Date of	Term	Rates			Method of payment
	in years	paid	received	surance	form	last ap- praisal	in years	Fire	Tor- nado	Total	
First class cities											
Atchison	10	\$ 25,016.75	\$ 3,217.65	yes	no	1932	5	\$.640	\$.210	\$.850	One-fifth yearly
Coffeyville	10	27,809.15	30.00	yes	yes	1933	3	.640	.210	.850	All at once
Fort Scott	10	61,174.61	0	yes	yes	1930	5	.838	.309	1.147	One-fifth yearly
Hutchinson	9	26,189.30	3,118.25	yes	yes	1926	5	1.060	.276	1.336	One-fifth yearly
Kansas City	10	135,000.00	275,709.46	yes	no	1920	3				One-fifth yearly
Leavenworth	10	20,613.81	57,500.00	yes	no	1932	3			1.080	
Parsons	10	38,254.15	1,188.33	yes	yes	1931	5	.976	.320	1.296	One-fourth yearly
Pittsburg	10	24,934.14	504.08	yes	yes	1932	5	.256	.091	.347	One-fifth yearly
Salina	10	18,768.53	0	yes	yes	1932	3	.540	.188	.728	One-third yearly
Topeka	10	79,476.70	5,000.00	yes	yes	1931	5	.167	.346	.513	One-fifth yearly
Wichita	10	36,251.46	3,312.89	yes	yes	1934	5	.191	.042	.233	One-fifth yearly
Totals		\$493,488.60	\$349,580.66								
Median		27,809.15	3,312.89	Loss ratio = 70.8 per cent							
Second class cities											
Abilene	10	\$ 8,038.33	\$ 0	yes	yes	1930	5	\$.884	\$.312	\$ 1.169	One-fifth yearly
Anthony	5	2,968.02	0	yes	no	1933	3	.840	.270	1.110	Every 3 years
Arkansas City	10	29,241.00	2,172.00	yes	yes	1930	5			.306	One-fourth yearly
Baxter Springs	8	4,093.60	300.00	yes	yes		5	.518	.180	.698	One-fifth yearly
Beloit	1	1,903.89	0	yes	yes	1930	5	.752	.540	1.292	
Blue Rapids	10	2,883.68	0	yes	no		3	1.260	.368	1.628	One-fifth yearly
Burlington	5	9,367.90	0	yes	yes	1932	5	2.248	1.109	3.357	One-fifth yearly
Chanute	10	24,552.16	984.96	yes	yes	1931	3			.586	One-third yearly
Concordia	9	9,378.68	410.50	yes	yes	1926	3	.665	.173	.838	One-third yearly
Council Grove	4	1,783.00	0	yes	no	1932	5	1.260	.720	.198	One-fifth yearly
Dodge City	6	7,409.89	150.00	yes	no	1933	5				One-fifth yearly
El Dorado	9	17,217.47	800.00	yes	yes	1932	3				One-third yearly
Emporia	10	12,154.50	0	yes	yes	1931	3	.370	.110	.480	One-third yearly
Eureka	7	10,011.56	0	yes	yes	1933	3	1.055	.247	1.302	One-third yearly
Florence	10	6,631.85	0	yes	no	1933	3	1.100	.297	1.397	
Girard	10	3,568.97	6.88	no	no		5	.240	.072	.312	One-fifth yearly
Great Bend	9	12,869.55	0	yes	yes	1933	5	.258	.068	.344	One-fifth yearly
Hays	4	1,138.75	0	yes	yes	1932	5			1.064	One-fifth yearly
Harper	10	4,250.00	0	yes	no	1927	5				One-fifth yearly
Herington	2	1,401.40	0	yes	yes	1933	3	.485	.109	.594	One-third yearly
Hiawatha	10	7,537.90	0	yes	yes	1933	3	.487	.092	.579	One-third yearly
Holton	10	3,681.84	0	yes	yes	1931	5	1.288	.292	1.580	One-fifth yearly
Horton	10	8,000.00	0	no	no		1	.353	.120	.473	All at once
Iola	10	21,291.08	8,462.48	yes	yes	1932	5	.255	.085	.340	
Junction City	10	12,361.78	0	yes	yes	1933	5				One-fifth yearly
Kingman	10	9,618.26	0	yes	yes	1933	3	.410	.098	.508	
Kinsley	9	5,164.13	0	yes	no	1933	5				One-fifth yearly
La Harpe	7	3,537.47	0	yes	yes	1926	3	1.650	1.980	3.630	All at once
Larned	10	9,787.73	1,323.11	yes	no		3	.400	.180	.580	
Liberal	9	7,612.13	900.00	yes	no		3				One-third yearly
Lindsborg	10	3,252.97	120.19	yes	yes	1933	5	1.608	.528	2.136	One-fifth yearly
Manhattan	10	17,883.99	0	yes	yes	1931	5	.264	.094	.358	One-fifth yearly
Marion	10	3,133.46	0	yes	no	never	5	.854	.484	1.338	
Marysville	10	4,085.00	0	yes	yes	1931	5			1.308	All at once
McPherson	9	7,274.61	54.52	no	yes	never	3			3.980	One-third yearly
Minneapolis	10	3,185.66	100.00	yes	no	1934	1&5				
Mulberry	7	2,365.06	5.00	yes	yes	1932	3	.860			One-third yearly
Olathe	10	12,174.19	0	yes	yes	1930	5	.964	.292	1.256	One-fifth yearly
Ottawa		12,429.29	0	yes	yes	1933	5	.896	.260	1.156	One-fifth yearly
Pratt	8	5,597.84	14.13	yes	no		3	.359	.108	.467	One-third yearly
Sterling	7	4,399.08	0	yes	no	never	5	.490	.212	.702	One-half yearly
Wellington	10	18,268.99	344.23	yes	no	1934	5				One-fifth yearly
Winfield	9	28,181.22	4,440.06	yes	yes	1933	5	1.104	.304	1.408	All at once
Totals		\$381,687.88	\$ 20,588.06								
Median		7,409.89	344.23	Loss ratio = 5.39 per cent							

First and second class cities	Totals	\$875,176.48	\$370,168.72								
	Median	9,000.00	850.00	Loss ratio = 42.0 per cent							

ceived in return \$370,168.72 for fire losses. The total losses paid constituted 42 per cent of the total premium payments. The first class cities show a loss ratio of 70.8 per cent. They paid \$493,488.60 in premiums and received in return \$349,580.66.

The second class cities showed a loss ratio of only 5.39 per cent, having paid premiums in the amount of \$381,687.88 and having received in return to cover losses the amount of only \$20,588.06.

It is to be observed that during the period covered by this survey the largest school fire in the history of Kansas occurred. This was the fire which destroyed the Wyandotte high school building in Kansas City, Kansas. The loss sustained in this one fire was almost three times the amount of fire loss of any other school property in the state. This one loss alone is equal to 51 per cent of the fire loss on school property for 1934. However, Kansas City alone paid \$135,000 in the past 10 years, which is 49 per cent of the amount of loss sustained in the Wyandotte fire.

The data of the questionnaire show not only what usually occurs in the average year, but they show what appears to be true when record breaking losses are involved. These data show that for premiums paid into fire insurance companies, the companies returned 42 cents and retained 58 cents out of each dollar paid for the protection from fire

of the schools included in this study for the period 1925-1934 while for the insurance of all property in Kansas, the companies retained only 45.8 cents. In other words the companies retained 26.6 per cent more of the premiums paid for the protection of schools than for the protection of all property in Kansas.

The year 1934 can be regarded as a catastrophic one because the losses shown in Table 3 for the year are 32 per cent greater than for any other year of school property losses since 1913, which is the earliest date for which information is available. Therefore, the percentages found in Table 15 may be considered as showing the minimum amount retained by the fire insurance companies. In other words the companies have been keeping a much greater percentage of each premium dollar paid for insuring school property than for insuring all property.

In Table 15 is shown what disposition was made of the premium dollar paid to stock companies during the years 1925 to 1935. In the United States on 99.91 per cent of all property insured 44.1 per cent of the premium paid for fire insurance was returned to the insured in payment for fire losses. This left 55.9 per cent for the company to pay expenses and with which to show a profit. The table also shows that the schools in the United States received for losses 28.7 per cent of each dollar paid as premiums as

Table 15. Distribution of the premium dollar
by stock companies.

Fire Insurance Business	: :For :years :	:Percentage :of premiums :returned to :insured	:Percentage :of premiums :retained by :companies
For all property in United States (9)	1933	44.10	55.90
For school property in United States (5)	1926- 1932	28.70	71.30
For all property in Kansas (3)	1926- 1934	54.18	45.82
For schools and public institutions in Kansas (3)	1926- 1934	39.00	61.00
For school property in 54 cities of Kansas (questionnaire)	1925- 1934	42.00	58.00
For first class cities of Kansas (questionnaire)	1925- 1934	70.80	29.20
For 43 second class cities in Kansas (questionnaire)	1925- 1934	5.39	94.61

compared with 71.3 per cent retained by the companies. This means that schools of the United States are paying 53.6 per cent more for their protection than are all types of property.

The second source of information valuable for this study is a report by the National Board of Fire Underwriters (3) showing the experience of stock companies by classes for Kansas. This includes educational institutions, colleges, schools, convents, and academies. The property to which the data in Table 16 pertains is classified in groups and the loss ratio is shown for each class. The total pre-

Table 16. Underwriting experiences by classes for
Kansas schools and public buildings*

Year	Premiums	Losses	Ratio
Brick -- protected			
1926	\$ 189,897	\$ 56,696	
1927	211,627	8,846	
1928	186,604	9,622	
1929	209,867	179,205	
1930	150,501	41,318	
1931	164,649	30,029	
1932	171,097	62,566	
Total	1,284,242	388,282	30.23
Frame -- protected			
1926	22,985	2,836	
1927	19,999	1,271	
1928	22,913	1,338	
1929	18,283	3,048	
1930	6,721	1,304	
1931	13,435	1,698	
1932	15,216	245	
Total	119,552	11,740	9.82
Brick and frame -- unprotected			
1926	132,141	116,639	
1927	116,867	45,809	
1928	104,114	51,329	
1929	111,654	43,938	
1930	79,048	30,122	
1931	84,752	11,389	
1932	82,157	36,622	
Total	710,733	335,848	47.25
Fireproof -- protected and unprotected			
1926	27,713	11	
1927	27,645	167	
1928	14,912	706	
1929	28,078	200	
1930	21,932	519	
1931	24,550	916	
1932	20,344	318	
Total	165,174	2,837	1.72

*Educational institutions, colleges, schools, convents,
and academies.

miums received by the companies was \$2,818,909 and the losses paid amounted to \$1,101,290 for the years 1926 to 1933 inclusive. The loss ratio for the entire group was 39 per cent. In other words this class of property was paying \$1.00 for each 39 cents needed to pay fire losses.

The classes vary in their ratio in Table 16 from 1.72 per cent to 47.25 per cent. This means that for fire resistive school buildings, districts are receiving only \$1.72 by the way of losses for each \$100 that they pay in premiums. It is generally accepted by insurance authorities that each class of property insured should carry its own losses and expenses over a period of years (8). But here we have our best insurance risks paying 27 times as much for their insurance as is paid for the brick and frame buildings in unprotected towns. Furthermore, according to these data it is shown that some classes of school property are 60 times better risks than dwellings.

The data compiled in Table 14 indicate that more schools were taking advantage of lower rates by means of co-insurance. Out of 54 districts 51 used coinsurance rates. A majority placed their insurance for the 5-year term and took advantage of the long term rate, 20 operated on a three year rate, while 2 continued to use the annual rate.

The preferred plan for paying premiums seems to be to pay an equal amount each year thus equalizing the appropria-

tions made for insurance in the budget. However, 9 continued to pay the full premium at one payment, 11 paid one-third yearly, 2 paid one-fourth yearly, and 28 paid one-fifth yearly.

Table 17 was prepared from Tables 5 to 11 to show the percentage of value covered by insurance for the losses occurring from 1928 to 1934, inclusive. These data show that a loss of \$188,760 occurred to school districts because no insurance was carried. This was divided into losses on buildings which was \$77,160 and losses on contents for the amount of \$111,600.

Eighty per cent of fire losses occurred in school districts where the property was insured for less than 80 per cent of its value while 50 per cent of the fire losses occurred in property that was insured for less than 62 per cent of its value. On the other hand 6.6 per cent of the fire losses occurred in school property where the coverage was 100 per cent or over. In one case the building was insured for 130 per cent of its value while no insurance was carried on its contents. A fire occurred which caused damage to the building amounting to \$3 and a loss to the contents amounting to \$9,000. This meant a \$9,000 loss when an excessive amount of insurance was carried on the building.

Table 17. Percentage of coverage and loss sustained by insurer or insured.

Percentage of coverage	Fre- quency	Loss of property by fire			Loss sustained by the insured		
		Amount of			Amount of		
		Loss on buildings	Loss on contents	Total	Loss on buildings	Loss on contents	Total
130	1	\$ 3	\$ 9,000	\$ 9,003	\$ --	\$ 9,000	\$ 9,000
125	1	150	--	150	--	--	--
111	1	10	4,000	4,010	--	4,000	4,000
100	4	4,150	323	4,473	--	--	--
96	1	3,000	--	3,000	--	--	--
91	3	260,205	10,200	270,405	--	300	300
90	2	5,211	500	5,711	500	--	500
88	1	1	--	1	--	--	--
86	1	40	1,900	1,940	--	1,900	1,900
80	6	17,900	2,825	20,725	1,400	700	2,100
78	1	10	--	10	--	--	--
77	2	3,100	1,500	4,600	--	--	--
75	3	1,505	400	1,905	300	200	500
74	1	1,200	--	1,200	--	--	--
72	2	105,500	19,510	125,010	140	100	240
71	4	49,112	8,160	57,272	14,000	3,150	17,150
70	6	8,362	830	9,192	2,400	300	2,700
69	1	6,500	750	7,250	2,000	250	2,250
68	1	50	--	50	--	--	--
67	2	4,200	1,300	5,500	400	100	500
66	5	21,010	4,500	25,510	7,000	1,500	8,500
65	2	3,600	575	4,075	800	--	800
63	3	2,200	340	2,540	450	240	690
62	2	2,005	200	2,205	750	--	750
61	2	19,000	1,300	20,300	3,500	--	3,500
60	4	10,200	625	10,825	4,000	200	4,200
58	1	50,000	12,000	62,000	21,000	8,000	29,000
57	2	1,502	--	1,502	650	--	650
56	1	2,500	600	3,100	1,100	200	1,300
54	1	150	--	150	--	--	--
53	2	3,015	710	3,725	1,300	400	1,700
52	1	2,500	200	2,700	1,200	200	1,400
51	2	11,000	1,887	12,887	3,400	487	3,887
50	9	123,095	9,705	132,800	61,200	4,300	65,500
47	1	1,500	300	1,800	800	300	1,100
45	1	2,200	400	2,600	1,200	200	1,400
44	1	5,000	1,200	6,200	2,800	400	3,200
40	2	40,000	8,500	48,500	20,000	1,000	21,000
38	1	60,000	5,000	65,000	37,000	3,500	40,500
37	2	4,150	1,215	5,365	2,500	1,190	3,690
33	4	5,950	810	6,760	3,200	600	3,800
23	1	35,000	6,000	41,000	27,000	--	27,000
10	1	300	150	450	--	--	--
1	1	40,000	100	40,100	39,900	--	39,900
0	11	77,160	111,600	188,760	77,160	111,600	188,760
Totals	106	\$993,146	\$227,315	\$1,220,461	\$339,050	\$154,317	\$493,367

Note: 6 reports show no value. This table shows the percentage of coverage, the amount carried by the insured and the amount of loss paid by insurance companies for buildings and contents.

The total loss of \$1,220,461 on all property is shown to consist of \$993,146 on the buildings and \$227,315 on the contents. Of this total amount \$493,367 was sustained by the school districts. The school districts sustained 35 per cent of the loss of buildings and 70 per cent of the loss of the contents.

Table 18 has been set up from Tables 5 to 11 to show the saving which would have been possible had the property been properly insured. This is shown for a coverage of 80 and of 90 per cent since these are the usual amounts recommended by authorities to be carried. If the property had been insured for 80 per cent, a saving of \$236,705 would have been possible, while if 90 per cent coverage had been practiced, a saving of \$290,135 would have resulted.

Table 18. Saving that would have been possible by proper coverage.

Year	: If insurance : had been for : 80 per cent of value	: If insurance : had been for : 90 per cent of value
1928	\$ 3,660	\$ 7,580
1929	49,940	58,470
1930	20,600	31,750
1931	15,240	20,970
1932	36,420	48,530
1933	6,795	8,585
1934	104,050	114,250
Total	\$236,705	\$290,135

Note: Data taken from Tables 5 to 11.

Kansas school and public institutions paid out \$2,818,909 in premiums and received back \$1,101,290 to cover insured fire losses during the period 1926 to 1934 (Table 19). In order to show what a state plan would do in Kansas a comparison has been made of the results of the Kansas methods with those of the South Carolina state plan. If in 1926 the Kansas school property had been placed under a similar state plan and the same class of property paying the same amount in premiums that actually was paid with the same cost for fire loss plus the percentage of operating expenses needed in South Carolina, the state of Kansas might well today have a reserve fund of about \$2,000,000, which is twice that maintained in South Carolina.

Table 19. Recapitulation of underwriting experience in Kansas, for educational institutions, colleges, schools, convents, academies.

Year	:	Premiums	:	Losses	:	Ratio
	:	received	:	paid	:	
1926	:	\$ 372,736	:	\$ 176,182	:	49
1927	:	376,138	:	56,093	:	15
1928	:	328,543	:	62,996	:	20
1929	:	367,882	:	226,391	:	62
1930	:	258,202	:	73,263	:	28
1931	:	287,386	:	44,032	:	15
1932	:	288,386	:	99,751	:	32
1933	:	266,237	:	37,298	:	14
*1934	:	272,974	:	325,284	:	119
Total or average	:	\$2,818,909	:	\$1,101,290	:	39

*The figures for 1934 have been changed to include the following: public buildings, hospitals, sanitariums, asylums, jails, public homes, museums of art, educational institutions, convents, and academies.

The procedure used to arrive at this conclusion is as follows: The amount of fire loss was \$1,101,290 for the nine years. This was 96 per cent of what South Carolina would need to carry on its own plan under our conditions. Therefore \$1,147,177 would have paid for all the losses by fire and the operating expenses incurred in handling the fire insurance business. The balance left after paying losses and expenses out of the net premium income of \$2,818,909 would be \$1,671,722. This amount with a reasonable rate of interest over the period of nine years would show a total of about \$2,000,000 accumulated as savings from the amount that was paid to stock companies.

The interest alone at 4 per cent on the surplus would pay for all loss and expenses on five years of the past nine years without any charge made to the property owners.

The property included in Table 13 is very similar to that carried in other state plans.

SUMMARY

Education is generally thought to be a function of the state, therefore, the state should be concerned with the problem of fire insurance for public school property. The following pertinent facts have been shown in this study:

1. Kansas school properties of 54 first and second class cities, for the years 1925 to 1934, have been paying

\$1.00 for fire insurance protection for each 42 cents returned in settlement of fire losses. In the first class cities for each \$1.00 paid in as premiums there was a return of 70 cents to cover fire losses. In 43 second class cities the insurance companies returned only 5 1/3 cents for each one dollar they received as premiums.

2. The National Board of Fire Underwriter's reports show, for the years 1926--1934 inclusive, that schools and public buildings of Kansas paid premiums amounting to \$2,818,909 and received only \$1,101,290 in return for payments of fire losses. This represents a loss ratio of 39 per cent.

3. A comparison of loss ratios to the premiums paid shows:

For all classes of property in the United States for 1933	44.10 per cent
For school property of 380 cities in the United States (for years 1926- 1932)	28.70 per cent
For all property in the state of Kansas for years 1926--1934	54.10 per cent
For school property of 54 cities of Kansas for years 1925--1934	42.00 per cent
For school property of all first class cities of Kansas (years 1925--1934) ...	70.80 per cent
For school property of 43 second class cities in Kansas (years 1925--1934) ...	5.39 per cent
For school property and public insti- tutions of Kansas (years 1926--1934) ..	39.00 per cent

4. Fire losses in Kansas for the years 1913 to 1934, inclusive, amounts to an average of \$156,743 per year. The losses for the years 1928 to 1934, inclusive, show 59 per cent of the annual loss was covered by insurance.

5. State insurance has long ago passed the experimental stage. The law of averages is unhampered and the risks are widely distributed. The experience gives protection and shows a very material saving over the methods used in Kansas. South Carolina, Wisconsin, and North Dakota are successfully carrying their insurance under the state self insurance plan.

6. Kansas today could very well have a reserve of \$2,000,000 if the schools and public property had adopted a state self insurance plan in 1926 and had paid the same premiums which they have paid to the regular insurance companies during this same period.

7. There are at least 49 city school districts in the United States and Canada successfully carrying their own insurance. If 49 cities can save money by carrying self insurance, certainly the state, as a larger administrative unit, should be able to save even more through a plan of state insurance.

8. Operating expenses incurred by state insurance organizations are only 4 cents of each premium dollar as compared with 52.1 (9) cents in the case of stock companies.

9. Kansas risks are especially favorable for the state insurance plan. Although cities in general are too small to handle their own insurance.

10. The demand for lower fire insurance rates on public school property is justifiable in the light of the evidence shown in this study.

11. School property represents better risks and is much more favorable to fire insurance companies than are all other classes of property.

12. School property in Kansas is insured from 0 per cent to 130 per cent of its value.

13. If school properties had been insured for the years 1928 to 1934 (inclusive) up to 80 per cent of their value a saving of \$236,705 would have resulted, while if 90 per cent coverage had been written a saving of \$290,135 would have resulted.

14. The best methods of insuring school property in Kansas are frequently not practiced.

15. Some school districts have actually made large reductions in fire insurance costs.

16. There is no sound reason why school insurance should not be carried with select mutual companies.

17. Plans and specifications for new school buildings should be submitted to the rating bureau so that any fire hazards might be eliminated before construction thereby

reducing the insurance rate to the minimum.

RECOMMENDATIONS

Careful study of the operation of the state insurance systems already in existence and the possibility of applying the general principles underlying them to conditions in Kansas would seem to justify, that school authorities demand marked reductions in rates from the commercial companies now insuring school property, or the adoption of the state self insurance plan for Kansas.

Under the present plan of insuring with commercial companies insurance costs in Kansas could be reduced materially by school districts making use of these methods:

1. By writing their insurance with A+, non-assessment mutual insurance companies.
2. By improving the conditions that account for the present penalties, defects in construction, occupancy, exposure, and faults of management thus reducing all fire hazards to the minimum.
3. By installing certain safety devices such as automatic sprinklers.
4. By using coinsurance.
5. By proper periodic appraisal of school property to avoid excessive insurance premiums because of overinsuring.

6. By writing all insurance in longer term (5-year) policies, which costs but four times the annual rate.
7. By setting up and pursuing continually a fire prevention program.
8. By insuring their property for at least 80 per cent of its value.
9. By eliminating unnecessary charges in the rates through a careful analysis of the schedule rating sheet furnished by the state rating bureau and remedying conditions which this reveals as the cause of charges.

The expiration dates of insurance policies should be arranged so that approximately the same amount of insurance expires each year, thus equalizing the insurance appropriations.

Adequate insurance records should be kept and safely filed in the school safe or a safety deposit box in a bank.

The annual report from each school district made to the state department of public instruction should be improved in such a way as to secure the following facts concerning school fire insurance. The following seems necessary to secure the important data:

The value of the buildings _____ Contents _____
 The amount of loss suffered through fire _____
 windstorm _____
 The total amount of insurance carried _____

Kind of Insurance	: Amount of insurance carried	: Rate : Coin-Flat	: Premiums paid : 1935-36	: If coin-surance for what per cent?
1. 5-year term:	:	:	:	:
2. 4-year term:	:	:	:	:
3. 3-year term:	:	:	:	:
4. 2-year term:	:	:	:	:
5. 1-year term:	:	:	:	:

ACKNOWLEDGMENTS

The writer wishes to express his thanks to Dr. W. E. Sheffer for suggesting this problem and for his aid throughout the study, and to Dr. C. V. Williams and Professor H. M. Stewart for valuable counsel.

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